



Ashland Industrial Services
Training. Inspections. Consulting. Project Management.

1 North Main Street
Shrewsbury, PA 17361
717.347.5616



100% FINAL ELEVATOR STUDY

FOR

UNITED STATES DEPARTMENT OF AGRICULTURE
FEDERAL BUILDING MD1872ZZ
4700 RIVER ROAD
COLLEGE PARK, MD 20740

December 30, 2016

SCOPE OF WORK

Ashland surveyed six (6) elevators at the referenced property during the week of October 10, 2016. The purpose of the audit and systems analysis is to develop scopes, cost estimates, time schedules, phasing for the interim repair projects and plan for the modernization projects. Ashland also identifies the primary equipment, determines the maintained condition of major components, records operating performance levels and evaluates the vertical transportation based on applicable industry and code standards.

Our report is arranged in sections as follows:

EXECUTIVE SUMMARY	Page 3
SECTION I - EQUIPMENT EVALUATION	
- Vertical Transportation Systems Profile.....	Page 6
- Life Cycle Analysis	Page 7
- Codes and Standards Review.....	Page 8
- Americans with Disabilities Act Compliance Survey	Page 9
SECTION II - MAINTAINED CONDITION EVALUATION	
- Itemized Deficiencies	Page 15
- Maintenance Contract Review.....	Page 16
- Recorded Operating Performance.....	Page 17
SECTION III - SCOPE, BUDGET COSTS & PRIORITIES	
- PE1 through PE6.....	Page 21
SECTION IV - PHOTOGRAPHS & KEY PLAN	
- Photographs	Attachment A
- Schedule.....	Attachment B
- Key Plan.....	Attachment C

EXECUTIVE SUMMARY

The elevator controllers, motor generator (MG) sets and DC hoist motors are old technology and OBSOLETE by design. Replacement parts are non-existent with spare parts that consist of only rebuilt components. The manufacture, Northern Elevator is no longer in business so technical support is limited to the worn and incomplete electrical prints that were found in the machine room. Replacement of the elevator controllers are immediately necessary in order to prevent extended shutdowns that could last weeks or even months. A modernization will remove the MG sets and be replaced with Variable Voltage Variable Frequency (VVVF) drives. The DC hoist motors will be replaced with AC hoist motors and the overall new elevator system will be more energy efficient than the current configuration.

The building is located at 4700 River Road, College Park, MD, 20740. It is a government owned building. It is currently occupied entirely by United States Department of Agriculture (USDA). General Services Administration (GSA) is the authority for the operations and maintenance of the building. The building has an area of 337,500 Gross SF, 337,500 Rentable SF and 300,000 Usable SF. The building has six (6) levels. These are floors 1 through 6. The building was built in 1995.

Ashland Industrial Services performed a comprehensive survey of the elevator equipment at the referenced property during the week of October 10, 2016. The office building's vertical transportation is provided by two (2) passenger groups of three (3) overhead geared traction passenger elevators (PE1 – PE3 & PE4 – PE6). One passenger group is located on the West side of the building (PE1 – PE3) and the other passenger group is located on the East side of the building (PE4 – PE6). The passenger elevators serve six (6) front openings (1-6), have a capacity of 3500 pounds and operate at 350 feet per minute. PE1 in the West side of the building has a rear service opening on the first floor, utilized by maintenance and building staff therefore PE1 has seven (7) total openings.

All passenger elevators are operating between 10-15% below contract speed. This is due to the elevator controller's inability to control the elevator coming into/out of each landing as it travels through the hoistway. It is typical, based on this type of equipment that the elevators are "slowed down" in order not to miss floor levels or cause additional shutdown issues, more than are occurring now. Door operating times, both in the open and close cycles, are excessively "long" and are also directly related to the type of "open loop" car door operator system that is currently being utilized. A controller and car door operator upgrade would eliminate these issues and improve elevator reliability and performance, based on industry standards.

Realizing that preventive maintenance is an ongoing process, Ashland's survey represents a snap shot on a specific day and time. Overall, the equipment is operating within code with evidence of preventive maintenance being performed on a sporadic basis. The machine room spaces are relatively clean and the areas are organized. The deficiencies found can be addressed during regular preventive maintenance procedures such as hoistway door adjustments and replacement of incandescent light bulbs. The HVAC system in each machine room was operating as designed. In anticipation of the modernization in the next

couple of years, it is recommended that the HVAC system in each machine room be replaced during the elevator modernization project.

Of particular concern is that Ashland also found outdated paperwork in each elevator machine room that illustrates that the annual safety inspections, as required by ASME A17.1 Code, have not been completed since July, 2015, making the tests overdue by more than four (4) months. These tests should be scheduled and completed as soon as possible. Record keeping of maintenance procedures and fireman's service monthly testing are not current or in some cases completely missing.

Incandescent bulb technology requires more frequent replacement when compared to LED type bulbs. In order to improve reliability Ashland recommends that a complete modernization is undertaken within the next 1-2 years which would include new microprocessor controls, removal of the motor generator sets to be replaced with VVVF AC drives, new operating fixtures and new cab finishes.

All pit ladders will require replacement in order to provide a "grab bar" at proper height; most do not have a grab bar at all. Pit lighting appears to be adequate and all pits were "dry" with little to no evidence of water/moisture intrusion.

The six (6) passenger elevators (PE1 – PE3, PE4 – PE6)) are original as installed in 1995 with applied panels, stainless steel reveals and egg crate drop ceilings. The interiors are in good condition for their age but are starting to show wear from normal use. The rear wall of each cab has a stainless steel flat bar stock type hand rail. Ventilation of all cabs is achieved by a standard cab fan mounted on top of each elevator cab shell and appears to be adequate. The finishes surrounding the call buttons are painted drywall and the hall lanterns are above the elevator entrance frames, finished in brushed stainless steel.

SECTION I - EQUIPMENT EVALUATION

VERTICAL TRANSPORTATION SYSTEMS PROFILE

Building: **4700 River Road (USDA)**

	PE1 - PE3	PE4 - PE6
Capacity	3,500	3,500
Loading (Pass/Serv/Freight)	Passenger	Passenger
Rated Speed (fpm)	350	350
Roping	1 to 1	1 to 1
Floors Served	6	6
Floor Identification	1 to 6	1 to 6
	1R (PE1)	
Machine Type:	OH Geared	OH Geared
Control Type:	Northern IPC	Northern IPC
Sequence of Operation	3 car group	3 car group
Door Configuration	SSCO	SSCO
Car Door Operator	Northern	Northern
Operating/Signal Equipment	Incandescent	Incandescent
Door Entrance Size	42" w X 84" h	42" w X 84" h
Car & Cwt Buffers	Oil	Oil
Car Safeties	Northern	Northern
Overspeed Governor	Northern	Northern
Power Supply	460V 3 PH	460V 3 PH
O.E. M.	U.S. Elevator	U.S. Elevator
Date of Installation	1995	1995
Modernization Contractor	N/A	N/A
Date of Modernization	N/A	N/A
Present Service Company	Quality Elev.	Quality Elev
3 or 5 Year Full Load Test	No Records	No Records
Annual Safety Inspection	Jul-15	Jul-15

LIFE CYCLE ANALYSIS – TRACTION SYSTEMS

Elevator I.D.: PE1 – PE3, PE4 – PE6

Date: 10/11/16

Component/System	Projected Design Life (Years)	Present Age (Years)	Remaining Useful Life (Years)	Condition Comments	Recommended Action
MACHINE ROOM					
1. Hoisting Machinery, Sheaves & Bearing	50-75	21	29	Good	Test & Rebuild as new
2. Drive Motor(s)	50-75	21	29	Good	New A/C motors under mod
3. Power Drives	30-50	21	9	OBSOLETE	Replace under mod
4. Signal Controls (Selectors)	20-25	21	0	OBSOLETE	Replace under mod
5. Motion Controls	20-25	21	0	OBSOLETE	Replace under mod
HOISTWAY AND PIT					
1. Wire Ropes (Hoist, Comp. & Governor)	20-25	21	0	Good	Replace under mod
2. Guide Rails	75+	21	54+	Good	Clean, align, tighten
3. Mechanical Safety Equipment & Counterweight	75+	21	54+	Good	Clean & lubricate
4. Hoistway Door Equipment	25-30	21	4	Good	Clean & lubricate
CAR EQUIPMENT					
1. Car Door Equipment	20-25	21	0	OBSOLETE	Replace under mod
2. Cab Enclosure	20-30	21	0	Fair	Replace under mod
3. Car Frame	75+	21	54+	Good	No action required
4. Car Safety	75+	21	54+	Good	Clean & lubricate
OPERATING/SIGNAL EQUIPMENT					
1. Fixtures	20-25	21	0	Fair	Replace under mod

CODES AND STANDARDS REVIEW – ELEVATORS ONLY

All elevators in the 4700 River Road Building were installed in 1995. The elevators have never been upgraded and are original as installed in 1995. The systems do not meet the latest code regulations in the following areas:

- Record Keeping - Data Tags / Testing Requirements (Annual Safety Inspections)
- Emergency Communication - Repair non-functioning telephone (PE5)

Note: Annual load tests are overdue for all traction elevators in the building. Record keeping is inconsistent with the last recorded preventive maintenance visit occurring in June, 2016.

Annual Safety Inspections (Cat 1) All test are performed at inspection speed with no load inside the elevator. Manually activate the safeties, governor, emergency final limits, over speed switch, door locks, gate switches, car door restrictors, stop switches and buffer switches. Activate Fireman's Service Phase I & II. Test emergency lighting / alarm / communications. Test the door protection devices and closing force. Unintended movement device is also verified.

5 year full-load (Cat 5): Same scope of work as the Cat 1 no load test. In addition, while elevator is operating at contract speed. Conduct a full load (elevator capacity) safety drop test, 125% capacity elevator brake test and a full load buffer test. Manually test the governor activation speeds and governor pull through.

What the 5 year test involves and what is expected at the end of the test? The elevator is loaded to maximum designed capacity and with the elevator traveling in the down direction; the speed governor is activated to put the elevator on emergency stop. The distance of slide on the main elevator rails is then measured for tolerance as well as the level of the elevator itself after the emergency brakes (safety) are applied and the car has come to a complete stop. After this is completed, the elevator is further tested in the down direction (under full load, contract speed) and strikes the elevator pit buffer. The elevator then is lifted, and the buffers (oil type) must return to original position within 90 secs. Additional weight is added (25% of capacity) to the cab. The elevator is tested again in the down direction and must stop within normal leveling tolerances between the car and hoistway entrance sills. All tests have specific tolerances set by ANSI A17.1 in relation to the elevator design; type, speed and capacity

THE AMERICANS WITH DISABILITIES ACT (ADAAG)
SURVEY OF EXISTING ELEVATOR SYSTEMS

ELEVATOR(S) IDENTIFICATION: PE1 – PE6

DATE: October 12, 2016

S = SATISFACTORY, U = UNSATISFACTORY, R = READILY ACHIEVABLE, NA = NOT APPLICABLE

A.D.A.AG SEC.	ITEM	TECHNICAL REQUIREMENTS	S	U	EXISTING CONDITION/ NOTES	R
4.10.1	General	<p>A. Elevators shall comply with ASME/ANSI A17.1-1990, Safety Code for Elevators and Escalators.</p> <p>B. Freight elevators shall not be considered as meeting the requirements of this section unless the only elevators provided are used as combination passenger and freight elevators for the public and employees.</p>	X		Per installation date of 1995	
4.10.2	Automatic Operations	<p>A. Elevator operation shall be <u>automatic</u>.</p> <p>B. Each car shall have a self-leveling feature that will automatically bring the car to floor landing within a tolerance of ½" under rated loading and zero loading conditions.</p> <p>C. This self-leveling feature shall be automatic and independent of the operating device and shall correct for undertravel and overtravel.</p>	X X X			
4.10.3	Hall Call Buttons	<p>A. Shall be centered at <u>42"</u> above floor.</p> <p>B. Shall have visual signals to indicate when call is registered and answered.</p> <p>C. Minimum size 3/4" in the smallest dimension.</p> <p>D. "UP" button shall be above "DOWN" button.</p> <p>E. Buttons shall be raised or flush.</p> <p>F. Objects mounted beneath buttons shall not project more than 4" from the wall.</p>	X X X X		N/A	

A.D.A.AG SEC.	ITEM	TECHNICAL REQUIREMENTS	S	U	EXISTING CONDITION/ NOTES	R
4.10.4	Hall Lanterns	<p>A. A visible and audible signal shall be provided at each hoistway entrance to indicate which car is answering a call.</p> <p>B. Audible signals shall sound once for "up", twice for "down", or shall have verbal annunciators that say "up" or "down".</p> <p>C. Visible signals shall have the following features:</p> <ol style="list-style-type: none"> 1. Fixtures shall be mounted with centerlines at least 72" above the lobby floor. 2. Visual elements shall be at least 2 ½" in the smallest dimension. 3. Signals shall be visible from the vicinity of the hall call button. <p>D. In-car lanterns, conforming to the above requirements, shall be acceptable.</p>	<p>X</p> <p>X</p> <p>X</p> <p>X</p> <p>X</p>		N/A	
4.10.5 4.30.4	Characters On Hoistway Entrances	<p>A. All elevator hoistway entrances shall have raised and Braille floor designations provided on both jambs.</p> <p>B. Characters shall be centered 60" above finish floor.</p> <p>C. Characters shall be 2" high, raised 1/32", upper case, sans serif or simple serif type, and shall be accompanied by Grade 2 Braille.</p>	<p>X</p> <p>X</p> <p>X</p>			
4.10.6 4.16(3)(i)	Door Protective and Reopening Device	<p>A. Elevator doors shall open and close automatically.</p> <p>B. Door shall have a reopening device that will stop and reopen a car door if an object or person obstructs the door.</p> <ol style="list-style-type: none"> 1. The device shall be capable of completing these operations without requiring contact for an obstruction passing through the opening at heights of 5" and 29" above finish floor. 2. Door reopening device shall remain effective for at least 20 seconds. After such interval, doors may close in accordance with ASME/ANSI A17.1-1990.Rule 112.4 and Rule 112.5 closing force provisions. 	<p>X</p> <p>X</p> <p>X</p>			

A.D.A.AG SEC.	ITEM	TECHNICAL REQUIREMENTS	S	U	EXISTING CONDITION/ NOTES	R
4.10.10	Floor Surfaces	<p>A. Shall be firm, stable and slip-resistant</p> <p>B. If carpet is used, it shall have the following features:</p> <ol style="list-style-type: none"> 1. Shall be securely attached; 2. A firm cushion pad or backing (or none); 3. A level loop, textured loop, level cut pile or level cut/uncut pile texture; 4. Maximum pile thickness: ½" 5. Exposed edges fastened to floor surfaces with carpet edge trim. 	X		N/A	
4.10.11	Illumination Levels	A. Illumination level at controls, platform and threshold and landing shall be minimum 5 footcandles.	X			
4.10.12 (1)	Car Controls: Buttons	<p>A. Size 3/4" minimum in least dimension.</p> <p>B. Buttons shall be raised or flush.</p>	X X			
4.10.12 (2)	Car Controls: Control Indicators	<p>C. All control buttons shall be designated by Braille and by raised standard alphabet characters for letters, Arabic symbols for numerals, or standard symbols are required in ASME/ANSI 17.1-1990.</p> <p>D. Characters shall be 5/8" to 2" high, raised 1/32", upper case, sans serif or simple serif type, and shall be accompanied by Grade 2 Braille.</p> <p>E. All raised designations shall be immediately left of the button to which they apply.</p> <p>F. Floor buttons shall be provided with visual signals which light when each call is registered and extinguish when each call is answered.</p>	X X X			
4.10.12 (3)	Car Controls: Height	<p>G. All floor buttons shall be maximum 54" above floor where side approach is provided, 48" maximum where forward approach is required.</p> <p>H. Emergency controls (including alarm and stop) shall be grouped at bottom of panel, with centerlines 35" minimum above floor.</p>	X X			

A.D.A.AG SEC.	ITEM	TECHNICAL REQUIREMENTS	S	U	EXISTING CONDITION/ NOTES	R
4.10.12 (4)	Car Controls: Location	I. Controls shall be located on a front wall if cars have center opening doors and at either a side wall or the front wall if cars have side opening doors.	X			
4.10.13	Car Position Indicators	<p>A. A visual car position indicator shall be provided above the car control panel or above the door.</p> <p>B. As the car passes or stops at a floor, the corresponding numbers shall illuminate and an audible signal shall sound.</p> <p>C. Numerals shall be a minimum of ½" high.</p> <p>D. Audible signal shall be no less than 20 decibels with frequency no higher than 1500 Hz.</p> <p>E. An automatic verbal announcement of the floor number may be substituted for the audible signal.</p>	<p>X</p> <p>X</p> <p>X</p> <p>X</p>		N/A	
4.10.14	Emergency Communications	<p>Emergency two-way communication system between the elevator and a point outside the hoistway shall comply with ASME/ANSI A17.1-1990</p> <p>A. Highest operable part of system shall be maximum 48" from floor.</p> <p>B. System shall be identified by raised symbol and lettering located adjacent to the device.</p> <p>C. Characters shall be 5/8" to 2" high, raised 1/32", upper case, sans serif or simple serif type, and shall be accompanied by Grade 2 Braille.</p> <p>D. If system uses a handset, minimum cord length shall be 29".</p> <p>E. If located in a closed compartment, door shall be operable with one hand, shall not require tight grasping, pinching, or twisting of the wrist, and shall require a maximum force of 5 lbf.</p> <p>F. The emergency communication system shall not require voice communication. (Voice only system is inaccessible to persons with speech or hearing impairments.)</p>	<p>X</p> <p>X</p> <p>X</p> <p>X</p> <p>X</p> <p>X</p>			

SECTION II - MAINTAINED CONDITION EVALUATION

ITEMIZED MAINTENANCE DEFICIENCIES

Machine Room: PE1 – PE3

1. Record keeping is not up to date. Provide maintenance and fireman's service testing records per Code.
2. Annual no-load tests are overdue, last performed in July, 2015.
3. Remove used parts and organize remaining spare parts.

Machine Room: PE4 – PE6

1. Record keeping is not up to date. Provide maintenance and fireman's service testing records per Code.
2. Annual safety inspections are overdue, last performed in July, 2015.
3. Remove used parts and organize remaining spare parts.
4. Machine room door does not lock, repair/replace broken lock set.

General Observations:

1. Hoistway/car door maintenance is overdue.
2. Replace worn car door gibs on PE2.
3. Adjust hoistway door eccentrics to eliminate gaps between door panels when forced open.
4. Repair hall position indicator on PE4
5. Repair non-operational emergency phone in elevator car of PE5
6. Repair damaged/loose hoistway door panel astragals on PE2.
7. Adjust door open duration upon activation of electronic edge detector to within industry standards, refer to Recorded Operating Performance chart.

MAINTENANCE CONTRACT REVIEW

Current Contract Provisions:

THESE DOCUMENTS HAVE NOT BEEN PROVIDED TO ASHLAND INDUSTRIAL SERVICES

Recommendations:

RECORDED OPERATING PERFORMANCE

SINGLE SPEED CENTER OPENING DOORS (42" wide)	ELEV. NO. PE2	ELEV. NO. PE3	ELEV. NO. PE4	ELEV. NO. PE5	ELEV. NO. PE6	ACCEPTABLE STANDARDS FOR THIS EQUIPMENT
A. SPEED - UP DIRECTION (FPM)	293*	298*	280*	284*	277*	333 – 367
B. SPEED – DOWN DIRECTION (FPM)	290*	299*	280*	282*	279*	333 – 367
C. DOOR OPENING TIME (SEC)	2.7*	2.5*	3.8*	2.2*	2.4*	1.4 – 1.6
D. DOOR CLOSING TIME (SEC)	3.2*	3.4*	3.9*	3.1*	3.2*	2.8 – 3.0
E. DOOR OPEN DURATION - CAR CALL (SEC)	6.0	6.1	4.7	5.0	5.5	3.0 minimum
F. DOOR OPEN DURATION - HALL CALL (SEC)	6.1	5.7	5.5	6.1	6.0	5.0 minimum
G. DOOR OPEN DURATION - AFTER PROTECTIVE SHIELD IS RE- ESTABLISHED (SEC)	6.0*	6.2*	6.1*	6.3*	6.5*	.5 to 1.0
H. FLOOR TO FLOOR PERFORMANCE TIME (SEC)	15.7*	17.8*	18.2*	15.8*	16.5*	11.5 – 12.5
I. START (milli g) Up/Down	33/72	60/52	42/40	61/50	24/21	
J. ACCEL (milli g) Up/Down	62/73	81/80	102/100	73/70	84/81	
K. DECEL (milli g) Up/Down	91/93	90/94	91/90	82/84	80/83	
L. STOP (milli g) Up/Down	31/32	30/30	34/33	32/30	33/42	
M. JERK (milli g) Up/Down	5.1/9.9	12.8/9.5	7.2/7.2	17.0/9.5	5.4/4.9	15.0 max
N. STOPPING ACCURACY (INCHES)	1/4	1/4	1/4	1/4	1/4	± ½
O. CAR DOOR CLOSING PRESSURE (LBS)	28	27	26	25	24	30 Maximum

* DENOTES UNACCEPTABLE CONDITION BASED ON STANDARDS SPECIFIED.

N/E - denotes "No Evaluation" of referenced standard performed.

N/A - denotes standard is "Not Applicable" to these systems.

N/O - denotes "Not Operative" at time of evaluation.

RECORDED OPERATING PERFORMANCE

SSCO; 42" wide (front) SSSO; 42" wide (rear)	ELEV. NO. PE1 (front)	ELEV. NO. PE1 (rear)	ACCEPTABLE STANDARDS FOR THIS EQUIPMENT
A. SPEED - UP DIRECTION (FPM)	305*	N/A	333 – 367
B. SPEED – DOWN DIRECTION (FPM)	314*	N/A	333 – 367
C. DOOR OPENING TIME (SEC)	4.0*	4.2*	1.4 – 1.6 (front) 2.0 – 2.2 (rear)
D. DOOR CLOSING TIME (SEC)	5.1*	5.1*	2.8 – 3.0 (front) 4.0 – 4.2 (rear)
E. DOOR OPEN DURATION - CAR CALL (SEC)	5.8	5.5	3.0 minimum
F. DOOR OPEN DURATION - HALL CALL (SEC)	5.4	6.2	5.0 minimum
G. DOOR OPEN DURATION - AFTER PROTECTIVE SHIELD IS RE- ESTABLISHED (SEC)	6.1*	6.0*	.5 to 1.0
H. FLOOR TO FLOOR PERFORMANCE TIME (SEC)	19.1*	N/A	11.5 – 12.5
I. START (milli g) Up/Down	62/91	N/A	
J. ACCEL (milli g) Up/Down	101/102	N/A	
K. DECEL (milli g) Up/Down	120/121	N/A	
L. STOP (milli g) Up/Down	54/51	N/A	
M. JERK (milli g) Up/Down	6.4/10.3	N/A	15.0 max
N. STOPPING ACCURACY (INCHES)	1/4	1/4	± ½
O. CAR DOOR CLOSING PRESSURE (LBS)	26	24	30 Maximum

* DENOTES UNACCEPTABLE CONDITION BASED ON STANDARDS SPECIFIED.

N/E - denotes "No Evaluation" of referenced standard performed.

N/A - denotes standard is "Not Applicable" to these systems.

N/O - denotes "Not Operative" at time of evaluation

DEFINITIONS AND MEASUREMENTS
OF ITEMS LISTED IN
RECORDED OPERATING PERFORMANCE

- A&B. **Speed** is the rate at which the measured unit travels. The speed has been measured during a complete run of the unit and was taken as the highest sustained value recorded using a hand held tachometer.
- C. **Door Opening Time** is defined as the start of car doors opening until they are fully opened. The time was measured in seconds from the moment the car doors start to open until the car doors are fully open (i.e., motion stops).
- D. **Door Closing Time** is defined as the start of the car doors closing until fully closed. The time was measured in seconds from the moment the car doors start to close until the car doors are fully closed (i.e., motion stops).
- E. **Door Open Duration for a Car Call** is defined as the length of time the car doors remain fully open in response to a car call without anyone passing through the protective shield. This time was measured in seconds from the stop in the open motion of the car doors until the start of the closing motion of the car door.
- F. **Door Open Duration for a Hall Call** is defined as the length of time the car doors remain fully open in response to a lobby call without anyone passing through the protective shield. This time was measured in seconds from the stop in the open motion of the car doors until the start of the closing motion of the car doors.
- G. **Door Open Duration After Protective Shield is Re-Established** is defined as the length of time the car doors remain open after an object has passed through the protective shield until the car doors begin to close. This time was measured in seconds from the stop in the motion of the car doors until the re-start of the closing motion of the car doors.
- H. **Floor to Floor Performance Time** is defined as the time required for the movement of a car between two (2) floors, including the door closing and effective door opening for passenger transfer. The time was measured in seconds from the start of door closing at one floor until the car was stopped (within stopping accuracy) at the next floor with the doors opened for passenger transfer.
- I. **Start Up/Down (milli g)** is measured at the beginning of car motion.
- J. **Accel Up/Down (milli g)** is the measure of acceleration immediately after the Start measure.
- K. **Decel Up/Down (milli g)** is the measure of transition from high speed to leveling speed or stop.
- L. **Stop Up/Down (milli g)** is measure of the stopping rate to the floor level.
- M. **Jerk Up/Down (milli g)** is a term used to describe a change in acceleration. In mathematical terms one jerk is equal to a change in acceleration of one foot per second per second, in one second of time. One jerk equals a rate change of .03108 g's in one second. Optimal jerk rate is 15.0 or less.
- N. **Stopping Accuracy** is the distance between the car and hoistway sills when the car is stopped at a floor and was measured as the vertical distance (in inches) between the horizontal planes of the car and hoistway sills when the car is stopped at a floor.
- O. **Car Door Closing Pressure** is the amount of force required to hold a door from closing after stalling the door, by external means, at about 1/3 of the closing distance. The door pressure was measured in pounds and was recorded upon removal of the physical block.

SECTION III – SCOPE, BUDGET COSTS & PRIORITIES

Design Intent

As part of Ashland's recommendations for upgrades, modernization and/or refurbishment of the elevator equipment, the elevator equipment rooms/spaces have been evaluated, including components such as lighting, HVAC, fire protection, emergency power interface, enclosures, etc. The scope of work for each grouping of elevators requires that the elevator systems and areas comply with GSA Standards / Guidelines / Alerts and all current Codes. The design will bring the elevators up to the latest editions of ASME A17.1 Safety Code for Elevators and Escalators, A17.3 Safety Code for Existing Elevators and Escalators, A18.1 Safety Standard for Platform Lifts and Stairway Chairlifts, ANPA 70 National Electric Code and NFPA 101 life safety codes.

Phasing of the elevator modernization should begin with the east end three (3) car group (PE4 – PE6), completing one (1) elevator at a time. Upon completion of the east end elevators proceed with the west end group (PE1 – PE3).

Passenger Elevators PE1 – PE6

Rebuild the U.S. Elevator overhead geared traction machines, provide new elevator controllers with VVVF drives, install “rope gripper” for unintended movement, provide new hoist and governor ropes, new hoistway wiring and traveling cables, new car and counterweight roller guides, new rollers and safety interlocks, new car door operator (closed loop), new car door panels and ventilation, new car top inspection station, new hall and car operating fixtures with LED lamps, paint entrance frames, new electronic door edge detector, new cab interior applied panels, ceiling and flooring. Retain car and counterweight guide rails, refurbish deflector sheaves and governor cable tension assembly, clean hoistway entrance sills and car sill, refurbish hoistway door panels, retain car frame and platform, modify lobby control panel. Provide new pit ladders.

Budget Cost per elevator: \$321,448 x 6 elevators = \$1,928,692 (FY 2017 dollars)

Building related work will be required as follows: Replace main power supply and distribution panel in its entirety, replace all circuit control devices with new components, make all elevator control connections to emergency power transfer switch and lobby control station, refurbish machine room area lighting, provide new HVAC unit(s) in elevator machine room, provide new pit and hoistway lighting. Paint machine rooms and hoistways as required.

Budget Cost for Building Related Work: \$151,152 x 2 machine rooms = \$302,304 (FY 2017 dollars)

Total Budget Cost for Elevators and Building Related Work for PE1 – PE6: \$2,230,996 (FY 2017 dollars)

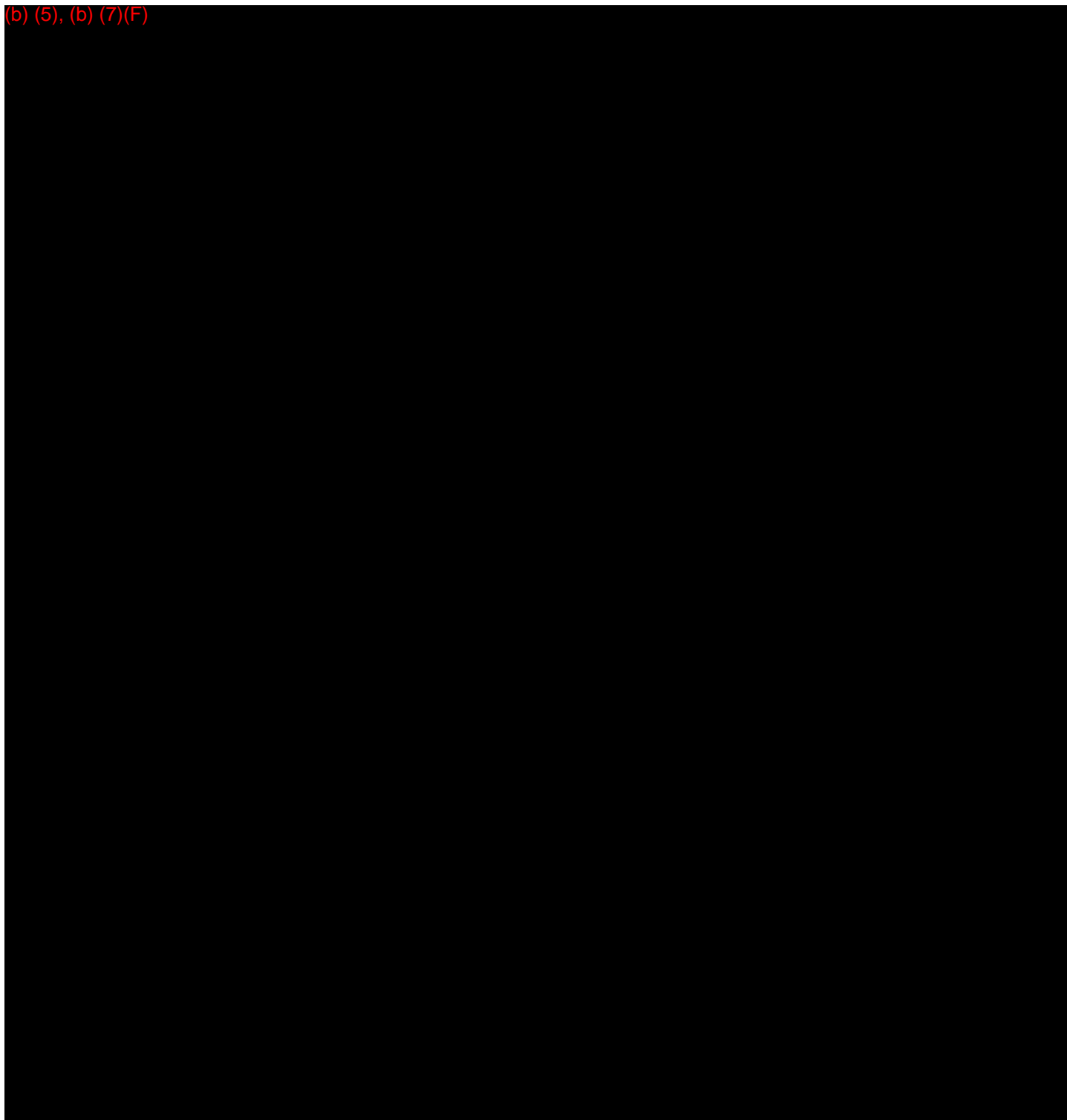
SECTION IV – PHOTOGRAPHS, SCHEDULE & KEY PLAN

See Attachments A, B & C

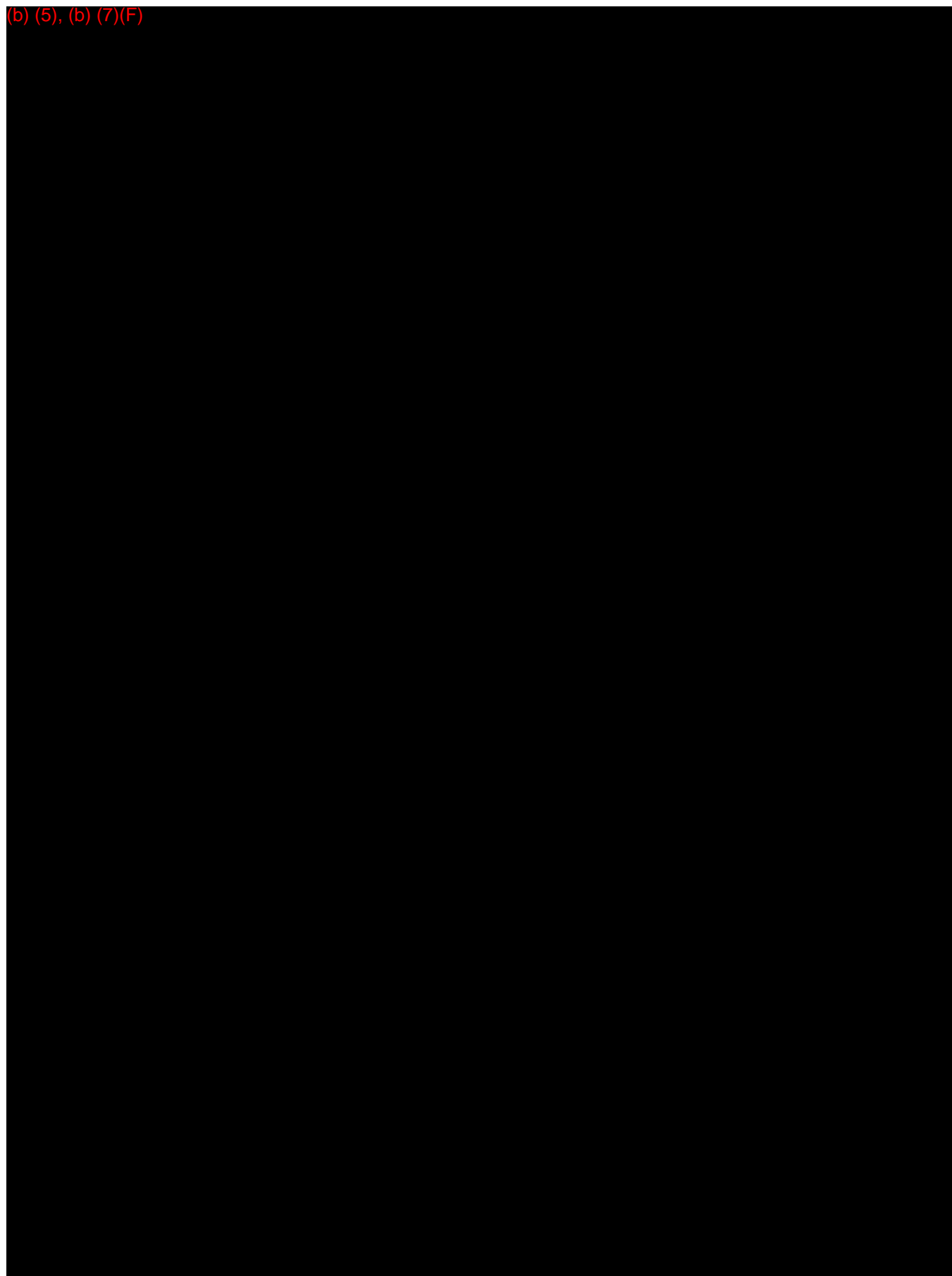
ATTACHMENT A

PHOTOGRAPHS

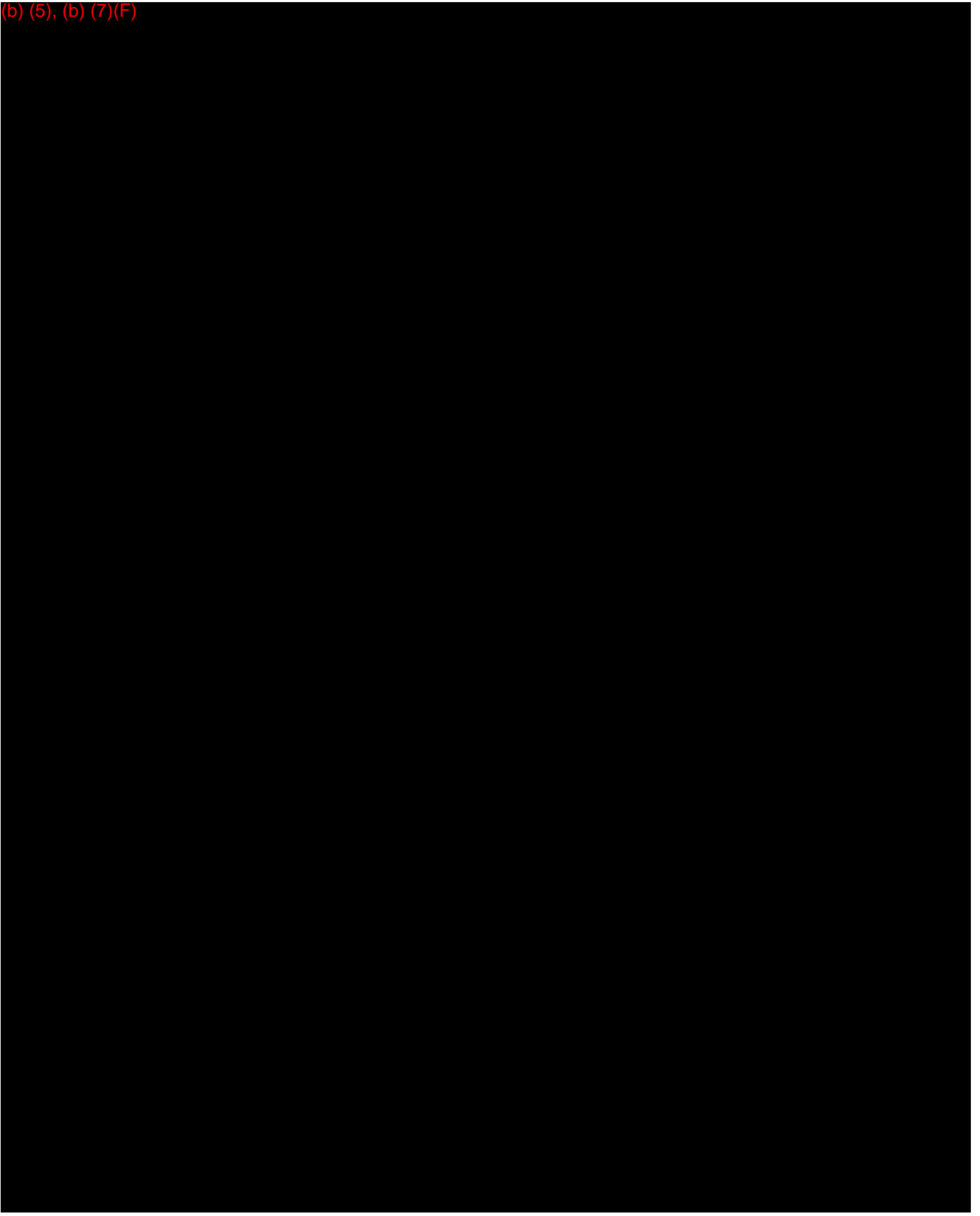
(b) (5), (b) (7)(F)



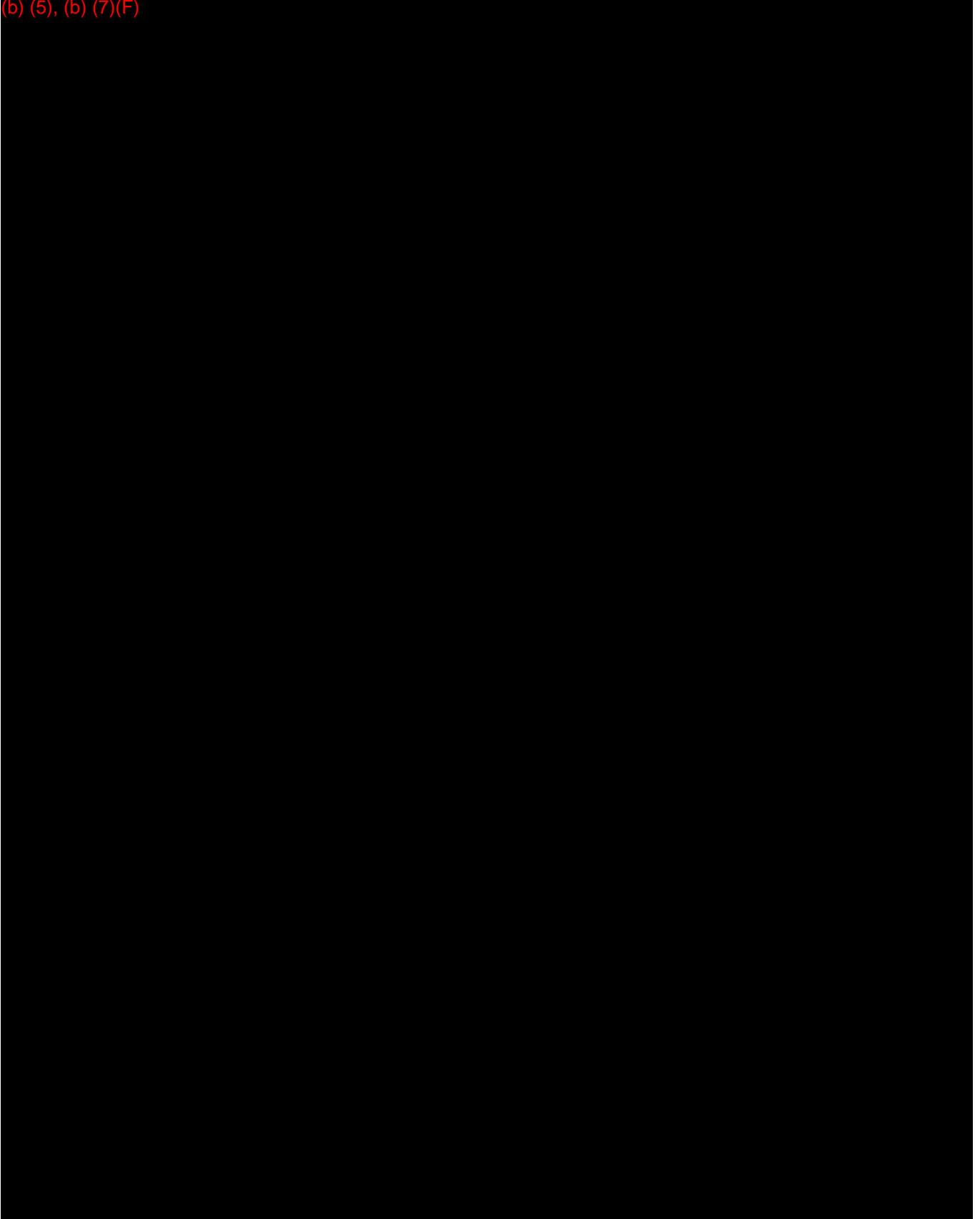
(b) (5), (b) (7)(F)



(b) (5), (b) (7)(F)



(b) (5), (b) (7)(F)



(b) (5), (b) (7)(F)

GENERAL NOTES

- CONTRACTOR SHALL VERIFY DIMENSIONS AND CONDITIONS AT THE JOB SITE AND SHALL NOTIFY SETTLERS ASSOCIATES OF ANY DISCREPANCIES, OMISSIONS AND/OR CONFLICTS BEFORE PROCEEDING WITH ANY WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL WALL AND CEILING FINISHES TO ENSURE THAT Joints AND TRANSITIONS BETWEEN MATERIALS WHETHER THEY WILL BE PAINTED OR WALL TO CEILING OR CEILING TO CEILING WILL BE SMOOTH, TYPICAL AND IN ACCORDANCE WITH THE DRAWING.
- UNLESS OTHERWISE NOTED, ALL PARTITIONS WITHOUT PARTITION TYPE INDICATOR SHALL BE TYPE (1) PARTITION DESIGNED TO RESIST 20 PSF FLOOR LOADS.
- ALL CRITICAL PARTITIONS SHALL BE DIMENSIONED FROM FINISH FACE OF CRITICAL TO FINISH FACE OF FINISH CENTER LINE OF SUPPORT TO FINISH FACE OF CRITICAL, UNLESS OTHERWISE NOTED.
- ALL PARTITIONS ATTACHED TO EXISTING WALLS SHALL BE LOCATED AT CENTERLINE OF WALLS.
- ALL PARTITION WALLS SHALL REMAIN OPEN UNTIL AFTER THE FLOORING IS LAYED AND THE PARTITION SHALL BE INSTALLED.
- WHERE ELECTRICAL AND PLENUMS FINISHES ARE TO BE LOCATED IN WALLS, THE GENERAL CONTRACTOR SHALL PROVIDE ROUGH-IN AND SCHEDULING TO ASSURE PROPER LOCATION.
- ALL CONCEALED FLOOR BLOCKING SHALL BE FIRST TREATED TO RESIST MOISTURE AND LOCAL FIRE HAZARDS.

SETTLERS ASSOCIATES INC.

1000 NORTH CLEGG ROAD
SUITE 800
FARMINGTON, CT 06031
TEL: 860-271-0000
FAX: 860-271-0001

CONSTRUCTION NOTES

- CENTER PARTITION ON CENTERLINE OF COLUMN.
- ALIGN PARTITION WITH CENTERLINE OF WALLS. SEE DETAIL B-10.
- PARTITION TO BE ALIGNED WITH FACE OF PARTITION COLUMN.
- VERIFY DIMENSIONS WITH ACTUAL EQUIPMENT TO BE INSTALLED.
- WALL EXPANSION JOINT.
- IF PLANT FLOORING, SEE B-10 FOR DETAIL PARTITION.
- BLIND 1 ALUMINUM FRAME HIDDEN.
- ALUMINUM COVER PLATE.
- TYPE SAVING.
- CONTINUOUS EXTENDED ALUMINUM FRAME.
- WALL FINISHED ABOVE.
- 6" RAISED ACCESS FLOOR.
- WALL FINISHES BLIND COVERED. LINE INDICATES EXTENT OF FINISH TO BE SET IN DETAIL B-10.
- WIRE MESH PARTITIONS.

UNITED STATES DEPARTMENT OF AGRICULTURE (USDA) CENTER AT RIVERSIDE

4700 RIVER ROAD
RIVERDALE, MARYLAND 20737

WALL LEGEND

SYMBOL	DESCRIPTION
---	EXISTING WALL OR STRUCTURE TO REMAIN
---	1" W/ FLOOR TO CEILING PARTITION
---	2" W/ FLOOR TO CEILING PARTITION
---	3" W/ FLOOR TO CEILING PARTITION
---	4" W/ FLOOR TO CEILING PARTITION
---	5" W/ FLOOR TO CEILING PARTITION
---	6" W/ FLOOR TO CEILING PARTITION
---	7" W/ FLOOR TO CEILING PARTITION
---	8" W/ FLOOR TO CEILING PARTITION
---	9" W/ FLOOR TO CEILING PARTITION
---	10" W/ FLOOR TO CEILING PARTITION
---	11" W/ FLOOR TO CEILING PARTITION
---	12" W/ FLOOR TO CEILING PARTITION
---	13" W/ FLOOR TO CEILING PARTITION
---	14" W/ FLOOR TO CEILING PARTITION
---	15" W/ FLOOR TO CEILING PARTITION
---	16" W/ FLOOR TO CEILING PARTITION
---	17" W/ FLOOR TO CEILING PARTITION
---	18" W/ FLOOR TO CEILING PARTITION
---	19" W/ FLOOR TO CEILING PARTITION
---	20" W/ FLOOR TO CEILING PARTITION
---	21" W/ FLOOR TO CEILING PARTITION
---	22" W/ FLOOR TO CEILING PARTITION
---	23" W/ FLOOR TO CEILING PARTITION
---	24" W/ FLOOR TO CEILING PARTITION
---	25" W/ FLOOR TO CEILING PARTITION
---	26" W/ FLOOR TO CEILING PARTITION
---	27" W/ FLOOR TO CEILING PARTITION
---	28" W/ FLOOR TO CEILING PARTITION
---	29" W/ FLOOR TO CEILING PARTITION
---	30" W/ FLOOR TO CEILING PARTITION
---	31" W/ FLOOR TO CEILING PARTITION
---	32" W/ FLOOR TO CEILING PARTITION
---	33" W/ FLOOR TO CEILING PARTITION
---	34" W/ FLOOR TO CEILING PARTITION
---	35" W/ FLOOR TO CEILING PARTITION
---	36" W/ FLOOR TO CEILING PARTITION
---	37" W/ FLOOR TO CEILING PARTITION
---	38" W/ FLOOR TO CEILING PARTITION
---	39" W/ FLOOR TO CEILING PARTITION
---	40" W/ FLOOR TO CEILING PARTITION
---	41" W/ FLOOR TO CEILING PARTITION
---	42" W/ FLOOR TO CEILING PARTITION
---	43" W/ FLOOR TO CEILING PARTITION
---	44" W/ FLOOR TO CEILING PARTITION
---	45" W/ FLOOR TO CEILING PARTITION
---	46" W/ FLOOR TO CEILING PARTITION
---	47" W/ FLOOR TO CEILING PARTITION
---	48" W/ FLOOR TO CEILING PARTITION
---	49" W/ FLOOR TO CEILING PARTITION
---	50" W/ FLOOR TO CEILING PARTITION
---	51" W/ FLOOR TO CEILING PARTITION
---	52" W/ FLOOR TO CEILING PARTITION
---	53" W/ FLOOR TO CEILING PARTITION
---	54" W/ FLOOR TO CEILING PARTITION
---	55" W/ FLOOR TO CEILING PARTITION
---	56" W/ FLOOR TO CEILING PARTITION
---	57" W/ FLOOR TO CEILING PARTITION
---	58" W/ FLOOR TO CEILING PARTITION
---	59" W/ FLOOR TO CEILING PARTITION
---	60" W/ FLOOR TO CEILING PARTITION
---	61" W/ FLOOR TO CEILING PARTITION
---	62" W/ FLOOR TO CEILING PARTITION
---	63" W/ FLOOR TO CEILING PARTITION
---	64" W/ FLOOR TO CEILING PARTITION
---	65" W/ FLOOR TO CEILING PARTITION
---	66" W/ FLOOR TO CEILING PARTITION
---	67" W/ FLOOR TO CEILING PARTITION
---	68" W/ FLOOR TO CEILING PARTITION
---	69" W/ FLOOR TO CEILING PARTITION
---	70" W/ FLOOR TO CEILING PARTITION
---	71" W/ FLOOR TO CEILING PARTITION
---	72" W/ FLOOR TO CEILING PARTITION
---	73" W/ FLOOR TO CEILING PARTITION
---	74" W/ FLOOR TO CEILING PARTITION
---	75" W/ FLOOR TO CEILING PARTITION
---	76" W/ FLOOR TO CEILING PARTITION
---	77" W/ FLOOR TO CEILING PARTITION
---	78" W/ FLOOR TO CEILING PARTITION
---	79" W/ FLOOR TO CEILING PARTITION
---	80" W/ FLOOR TO CEILING PARTITION
---	81" W/ FLOOR TO CEILING PARTITION
---	82" W/ FLOOR TO CEILING PARTITION
---	83" W/ FLOOR TO CEILING PARTITION
---	84" W/ FLOOR TO CEILING PARTITION
---	85" W/ FLOOR TO CEILING PARTITION
---	86" W/ FLOOR TO CEILING PARTITION
---	87" W/ FLOOR TO CEILING PARTITION
---	88" W/ FLOOR TO CEILING PARTITION
---	89" W/ FLOOR TO CEILING PARTITION
---	90" W/ FLOOR TO CEILING PARTITION
---	91" W/ FLOOR TO CEILING PARTITION
---	92" W/ FLOOR TO CEILING PARTITION
---	93" W/ FLOOR TO CEILING PARTITION
---	94" W/ FLOOR TO CEILING PARTITION
---	95" W/ FLOOR TO CEILING PARTITION
---	96" W/ FLOOR TO CEILING PARTITION
---	97" W/ FLOOR TO CEILING PARTITION
---	98" W/ FLOOR TO CEILING PARTITION
---	99" W/ FLOOR TO CEILING PARTITION
---	100" W/ FLOOR TO CEILING PARTITION

